

Amendments to the Claims:

1. (currently amended) A method (300) of determining per-cell traffic coverage in a cellular communication system that comprises multiple cells, the method ~~characterised by~~ comprising the steps of:

receiving measurements of ~~one or more~~ parameters relating to one or more operations of a first cell in a cellular communication system, wherein said ~~one or more~~ parameters includes information relating to ~~whether a~~ how many and which cells serve a wireless subscriber communication unit ~~can be served by one or more other cells than the first cell or uniquely served by the first cell~~; and

calculating (310, 315) a degree of coverage overlap for said first cell based on a number of said measurements, ~~wherein said~~ by partitioning said measurements ~~are partitioned~~ (310) into at least one or more of at least three categories with respect to the first cell, wherein selected from the group of:

(i) A first category is where the measurement indicates a wireless subscriber unit that is uniquely served by the first cell,

(ii) A second category where the measurement indicates a wireless subscriber unit that can be served by ~~one or more other~~ cells other than the first cell, and

(iii) A third category where the measurement indicates a wireless subscriber unit that is served by a neighbouring cell but could be served by the first cell.

2. (currently amended) The method (300) of determining per-cell traffic coverage in a cellular communication system according to Claim 1, wherein the step of calculating (310, 315) a degree of coverage overlap based on a number of said measurements employs a statistically valid sample of said measurements.

3. (currently amended) The method (300) of determining per-cell traffic coverage in a cellular communication system according to ~~any preceding~~ Claim 1, wherein the step of calculating (310, 315) comprises determining a unique coverage factor (UCF) for that cell using Measurement Reports (MR), where:

$$\text{UCF} = \frac{\text{Sum of MRs with no and/or weak neighbours}}{\text{Total Sum of MRs}}$$

4. (currently amended) The method (300) of determining per-cell traffic coverage in a cellular communication system according to ~~any preceding~~ Claim 1, the method further ~~characterised by~~ comprising the step of:

converting (315) a number of measurements to Erlangs to determine a coverage overlap based on subscriber traffic within said cell.

5. (currently amended) The method (300) of determining per-cell traffic coverage in a cellular communication system according to ~~any preceding~~ Claim 1, the method further ~~characterised by~~ comprising the step of:

allocating a priority, ~~for example an alarm priority,~~ to said cell based on said calculation.

6. (currently amended) The method (300) of determining per-cell traffic coverage in a cellular communication system according to ~~any preceding~~ Claim 1, the method further ~~characterised by~~ comprising the step of:

in response to said calculation, re-configuring (335) an at least one operational parameter of said cell, for example selected from the group of: a transmit power, a beam-forming antenna ~~tilt or direction changes, or and~~ turning off a cell, ~~in response to said calculation.~~

7. (currently amended) The method (300) of determining per-cell traffic coverage in a cellular communication system according to ~~any preceding~~ Claim 1, the method further ~~characterised by~~ comprising the steps of:

storing said calculations; and

using (330) said stored calculation subsequently to determine a cell outage strategy.

8. (currently amended) The method (300) of determining per-cell traffic coverage in a cellular communication system according to ~~any preceding~~ Claim 1, wherein the steps of measuring and calculating are used in an automatic frequency planning operation of said cellular communication system.

9. (currently amended) The method (300) of determining per-cell traffic coverage in a cellular communication system according to ~~any preceding~~ Claim 1, wherein the wireless communication unit (146) receives measurement reports from a wireless serving communication unit, ~~for example selected from the group of:~~ a base transceiver station (122-132), ~~or and~~ a wireless subscriber communication unit (112-116).

10-11. (canceled).

12. (currently amended) A communication unit (146) for use in a cellular communication system that comprises multiple cells, the communication unit (146) comprising:

a ~~receiving function~~ receiver for receiving measurements of ~~one or more~~ parameters relating to one or more operations of a first cell in said cellular communication system; and

a processor, operably coupled to said ~~receiving function~~ receiver, to process said received data, ~~the communication unit characterised in that~~ wherein said processor calculates a degree of coverage overlap based on a number of said measurements, ~~wherein: said processor partitions by~~ partitioning said received measurements into at least one of three categories with respect to the first cell, ~~wherein~~ selected from the group of:

(i) A first category ~~indicates~~ indicating a wireless subscriber unit that is uniquely served by the first cell,

(ii) A second category where the measurement indicates a wireless subscriber unit that can be served by a number of cells, and

(iii) A third category where the measurement indicates a wireless subscriber unit that is served by a neighbouring cell but is located such that it could be served by the first cell.

13. (currently amended) The communication unit according to Claim 12, wherein said processor determines a unique coverage factor (UCF) for a cell (~~UCF~~) using Measurement Reports (MR), where:

$$\frac{\text{UCF} = \text{Sum of MRs with no and/or weak neighbours}}{\text{Total Sum of MRs}}$$

14. (currently amended) The communication unit according to ~~any of preceding Claims 12 to 13~~, wherein said processor converts a number of measurements to Erlangs to determine a coverage overlap based on subscriber traffic within said cell.

15. (currently amended) The communication unit according to Claim 14, wherein said processor allocates a priority, ~~for example an alarm priority~~, to said cell based on said calculation.

16. (currently amended) The communication unit according to ~~any of preceding Claims 12 to 15~~, wherein, in response to said calculation, said communication unit ~~or a unit operably coupled to the communication unit is operable to~~ re-configures at least one ~~or more~~ operational parameters of said cell ~~in response to said calculation~~.

17. (currently amended) The communication unit according to Claim 16, wherein said communication unit configures said cell for at least one of the group of: transmit power changes, beam-forming antenna changes, and/or switching off said cell site.

18. (currently amended) The communication unit according to ~~any of preceding Claims 12 to 17~~, wherein said communication unit is an operations and management centre (146) configured to receive measurement report data relating to cells in said cellular communication system.

19. (currently amended) The communication unit according to ~~any of preceding~~ Claims 12 to 18, wherein said measured data includes at least one ~~or more~~ of the following:

(i) Cell statistical information including at least one of Congestion, Blocking, Mean-Hold Time (MHT), and Handover (HO) Cause distribution information;

(ii) One or more Measurement Reports; ~~or~~ and

(iii) Control Signalling behaviour.

20. (currently amended) The communication unit according to ~~any of preceding~~ Claims 12 to 19, wherein said processor is operably coupled to a memory device for storing said calculations for subsequent use in determining a cell outage strategy.

21. (currently amended) The communication unit according to ~~any of preceding~~ Claims 12 to 20, wherein said communication unit is able to communicate on at least one of a GSM, GPRS, UMTS, iDEN, ~~or~~ and CDMA cellular communication system.